Abstract BOOK SIAART

DENTAL INJURY IN GENERAL ANESTHESIA: A COMPARISON BETWEEN MCINTOSH BLADE LARINGOSCOPY AND MCGRATH® VIDEOLARYNGOSCOPY

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INTRODUCTION. Dental injury occurres in 0.06 - 0.13 % of general anesthesia procedures requiring endotracheal intubation, and it is still a reason of complaint against anesthetists. Maxillary central incisors are the most commonly teeth injured.1
In our center claims related to teeth damage after intubation ended with a total reimbursement of 13.000 Euros (2014-2015) and 5 patients (2014 to June 2016) were admitted for cares in Prosthodontics Implant dentistry dept. Dental School - Turin.

BUCX et al.2 used a strain gauge based sensor between handle and blade of the laryngoscope to measure forces applied on the maxillary incisors to show that during routine laryngoscopy great forces are exerted on the maxillary incisor teeth with no differences based on the operator experience.

OBJECTIVES.The aim of this study is to measure of the forces applied on teeth using a direct laryngoscope or a McGRATH® videolaringoscope. Many authors described how lower force on soft tissue could be applied using a VLS (GlideScope) instead of a standard laryngoscope (P=0.05).3, but no studies have ever been performed involving the use of a force sensor directly applied on teeth.

The aim of our study is to measure the forces applied on teeth after the application of a customized bite (2 mm dental bite) applied on the manikin. Anesthesiologists and anesthesia residents from "Città della Salute e della Scienza",Turin will be asked to perform 3 intubations using the standard intubation system, and other 3 using McGRATH® videolaringoscope in order to test the intubation forces exerted.

MATERIALS AND METHODS. Manikin: Adult Male Laerdal Medical intubation trainer.
Dental Bite: Customized soft 2mm bite made after manikin teeth and hard palate impression (Aquayl sylicon material Dentsply) with transparent resin material (ORTHO Resin Dentsply).
Sensor: Flexiforce® sensor (Tekscan Inc.), a pressure transducer based on piezoresistive technology applied with the bite to the manikin. Force application results in a resistance which can be measured by an ohmmeter.
ELF measurement system integrates Flexiforce sensor, a hardware interface, which can be connected to a computer for real-time force measurement data acquisition.
Sensor Handle: Sensor's tab is placed into the sensor handle which gathers data from sensor, processes it, and forwards it to the computer.

EXPECTED RESULTS. We expect to demonstrate that the use of McGRATH® VLS reduces the strengths applied on the maxillary arch at least of 50%: McGRATH® VLS can be useful in tooth damage prevention during general anesthesia requiring patient intubation.

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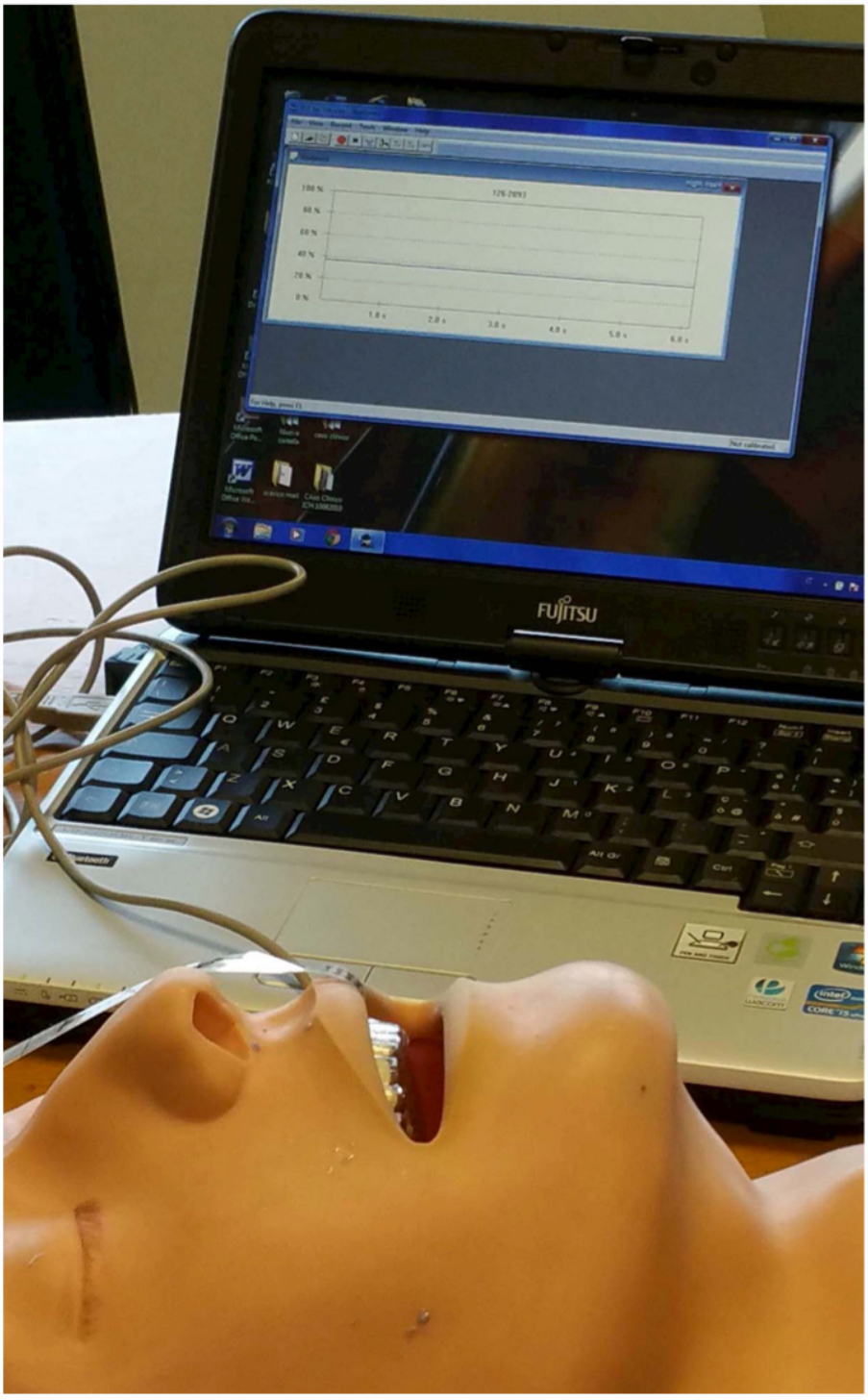
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